

WHAT IS CLAIMED IS:

1. A replenishing developer, comprising: 1 wt. part of a carrier and 2 - 50 wt. parts of a toner, wherein the carrier is a magnetic fine particle-
- 5 dispersed resin carrier comprising at least inorganic compound particles and a carrier binder resin, and the toner has a weight-average particle size of 3 to 10  $\mu\text{m}$  and contains 1 to 40 wt. % of solid wax.
- 10 2. A replenishing developer according to Claim 1, wherein the carrier binder resin comprises a thermosetting resin.
3. A replenishing developer according to Claim
- 15 1, wherein the carrier binder resin comprises at least a phenolic resin.
4. A replenishing developer according to Claim 1, wherein the carrier comprises a carrier core and a resin coating the carrier core.
- 20 5. A replenishing developer according to Claim 4, wherein the coating resin comprises a silicone resin.
- 25 6. A replenishing developer according to Claim 1, wherein the carrier has a volume-average particle

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size of 15 to 60  $\mu\text{m}$ .

7. A replenishing developer according to Claim  
1, wherein the carrier has a true specific gravity of  
5 2.5 to 4.5.

8. A replenishing developer according to Claim  
1, wherein the carrier has a magnetization ( $\sigma_{1000}$ ) as  
measured at a magnetic field of  $1000/4\pi$  kA/m of 15 -  
10  $65 \text{ Am}^2/\text{kg}$  (emu/g), and a residual magnetization ( $\sigma_r$ )  
of  $0.1 - 20 \text{ Am}^2/\text{kg}$ .

9. A replenishing developer according to Claim  
8, wherein the carrier has a residual magnetization  
15 ( $\sigma_r$ ) of  $0.1 - 20 \text{ Am}^2/\text{kg}$ .

10. A replenishing developer according to Claim  
1, wherein the carrier exhibits a flowability A in a  
magnetized state and a flowability B in a de-  
20 magnetized state, satisfying  $B/A \leq 1.5$ .

11. A replenishing developer according to Claim  
10, wherein the carrier exhibits A and B satisfying  
B/A  $\leq 1.2$ .  
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12. A replenishing developer according to Claim  
1, wherein the carrier has a residual magnetization  $\sigma_r$

( $\text{Am}^2/\text{kg}$ ) and a volume-average particle size  $d$  ( $\mu\text{m}$ ) satisfying:

$$1.0 \leq d/\sigma_r < 30.0.$$

5        13. A replenishing developer according to Claim 1, wherein the carrier has a residual magnetization  $\sigma_r$  ( $\text{Am}^2/\text{kg}$ ) and a volume-average particle size  $d$  ( $\mu\text{m}$ ) satisfying:

$$5.1 \leq d/\sigma_r \leq 12.3.$$

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14. A replenishing developer according to Claim 1, wherein the inorganic compound particles comprise magnetic particles containing at least one additive element selected from the group consisting of  
15        magnesium, silicon, manganese and phosphorus.

15. A replenishing developer according to Claim 14, wherein the magnetic particles contain said at least one additive element in a total amount of 0.03 -  
20        5.0 wt. % of Fe.

16. A replenishing developer according to Claim 15, wherein the magnetite particles contain at least one metal element selected from the group consisting  
25        of zinc, copper, nickel, cobalt, aluminum, tin, titanium and zirconium in a total amount of 0.01 - 3.0 wt. % of Fe, and contain the additive element and the

metal element surface-exposed on the magnetite particles in a total amount of 0.01 - 1.5 wt. % of Fe.

17. A replenishing developer according to Claim 5 16, wherein the magnetite particles contain the additive element surface-exposed on the magnetite particles in a total amount of 0.01 - 0.5 wt. % of Fe.

18. A replenishing developer according to Claim 10 15, wherein said at least one additive element is divided into a first additive element of magnesium and at least one second additive element selected from the group consisting of silicon, manganese and phosphorus, and said first additive element and said at least one 15 second additive element are contained in the magnetite particles in a weight ratio of 1:9 to 9:1.

19. A replenishing developer according to Claim 1, wherein the inorganic compound particles have been 20 surface-treated with a lipophilizing agent.

20. A replenishing developer according to Claim 19, wherein the lipophilizing agent is a silane coupling agent.

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21. A replenishing developer according to Claim 4, wherein the carrier core comprise particles

produced by polymerization of a polymerizable composition comprising the inorganic compound particles and a monomer providing the binder resin through the polymerization.

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22. A replenishing developer according to Claim 1, wherein the toner comprises toner particles produced by polymerization.

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23. A replenishing developer according to Claim 1, for use in a developing method of developing an electrostatic latent image on an image-bearing member with a two-component developer comprising a toner and a carrier stored in a developer vessel while supplying the replenishing developer.

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24. A replenishing developer according to Claim 23, which is supplied in response to a toner consumption detected by detecting a toner concentration in the developer vessel.

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25. A developing method, comprising: developing an electrostatic latent image on an image-bearing member with a two-component developer comprising a toner and a carrier stored in a developer vessel, while supplying as required a replenishing developer to the developer vessel;

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wherein the replenishing developer comprises  
1 wt. part of a carrier and 2 - 50 wt. parts of a  
toner, wherein the carrier is a magnetic fine  
particle-dispersed resin carrier comprising at least  
5 inorganic compound particles and a carrier binder  
resin, and the toner has a weight-average particle  
size of 3 to 10  $\mu\text{m}$  and contains 1 to 40 wt. % of solid  
wax.

10 26. A developing method according to Claim 25,  
wherein the replenishing developer is supplied to the  
developer vessel in response to a toner consumption  
detected by detecting a toner concentration in the  
developer vessel.

15 27. A developing method according to Claim 25,  
using as the replenishing developer a replenishing  
developer according to any one of Claims 2 - 22.

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